INSTRUCTIONS

-J02169 REV. 3/1/94

Kit Number 87166-93

TLE SIDECAR ATTACHING KITS

General

This instruction sheet covers the installation of the following kits:

PART NO.	DESCRIPTION
87166-93	**TLE Sidecar Connection Kit.** This kit provides the mechanical components required to attach the TLE Sidecar to a 1993 -1994 FLT or FLHT motorcycle. This kit will also fit 1983-1992 models but will require ordering additional parts. See chart at end of this Instruction Sheet.
87142-83A	**Steering Damper Mounting Kit.** This kit contains a mounting bracket and hardware for mounting the steering damper.

NOTE

- *Separate installation instructions for each of the above kits are contained on the following pages. Kits are for installation on 1983 or later FLT and FLHT motorcycles only.*
- *The rear mount assembly (1) will retrofit 1992 and earlier vehicles, but the rider will have to purchase the 1993 and later adjustable footboard support, Part No. 52719-93; bolt, Part No. 2851 and lockwasher, Part No. 7038.*
- *On 1984 to 1987 FLT and FLHT, the parts for rerouting the air suspension hose are not furnished with this kit. To reroute the air suspension hose the following parts must be ordered through regular parts channels:*

  Hose - 49060-84
  Plug - 45830-48
  Tee - 74423-68

- *See chart at end of this Instruction Sheet for complete details of adapter kits for various years motorcycle/ sidecar combinations.*

⚠WARNING

The rider's safety depends on this kit being installed correctly. Harley-Davidson recommends that this kit be installed only by a qualified Harley-Davidson dealer.

TLE Sidecar Connection Kit, Part No. 87166-93

GENERAL

This connection kit is designed for, or adaptable to, 1983 and later FLT and FLHT motorcycles and provides the mounts and hardware necessary to attach the TLE sidecar.

KIT CONTENTS

See Figure 1. This kit contains the following items:

ITEM	QTY	DESCRIPTION
1	1	Rear mount assembly
2	1	Lower front mount
3	1	Right stabilizer
4	1	Left stabilizer
5	1	Backing plate
6	1	Front upper clamp
7	1	Rear upper clamp
8	1	Brake line tee
9	1	Plug, 3/8-24
10	1	Bolt,1/2-13 x 2-1/2 in.
11	1	Cotter pin
12	1	Bolt, 1 /2-13 x 1 -3/4 in.
13	1	Lockwasher,1/2 in. ID
14	1	Washer, 17/32 x 1-1/2 x 9/64 in.
15	4	Bolt, 3/8-16 x 1-3/4 in.
16	4	Bolt, 3/8-16 x 1-1/2 in.
17	2	Bolt, 3/4-10 x 2-3/4 in.
18	2	Nut, 3/4-10
19	2	Lockwasher, 0.750 in. ID
20	1	Bolt, 7/16-14 x 1-1/4 in.
21	1	Bolt, 7/16-14 x 2 in.
22	1	Lockwasher, 7/16 in. ID
23	2	Washer, shim, 0.031 in. thick
24	2	Washer, shim, 0.015 in. thick
25	2	Washer, shim, 0.007 in. thick
26	2	Washer, shim, 0.004 in. thick
27	1	Stabilizer adjuster
28	1	Steering damper
29	1	Washer, 1/2 x 1-1/16 x 3/32 in.
30	1	Locknut, 1/2-13
31	1	Clamp
32	1	Steering damper mounting kit

The Steering Damper Mounting Kit contains the following parts.

33	1	Rod end
34	1	Bracket
35	1	Spacer
36	2	Bolt, 3/8-16 x 1 -3/4 in.
37	2	Locknut, 3/8-24
38	2	Washer, 3/8 in. ID
39	3	Washer, 13/32 x 1 1/32 x 1/8 in.
40	1	Bolt, 3/8-16 x 2-3/4 in.

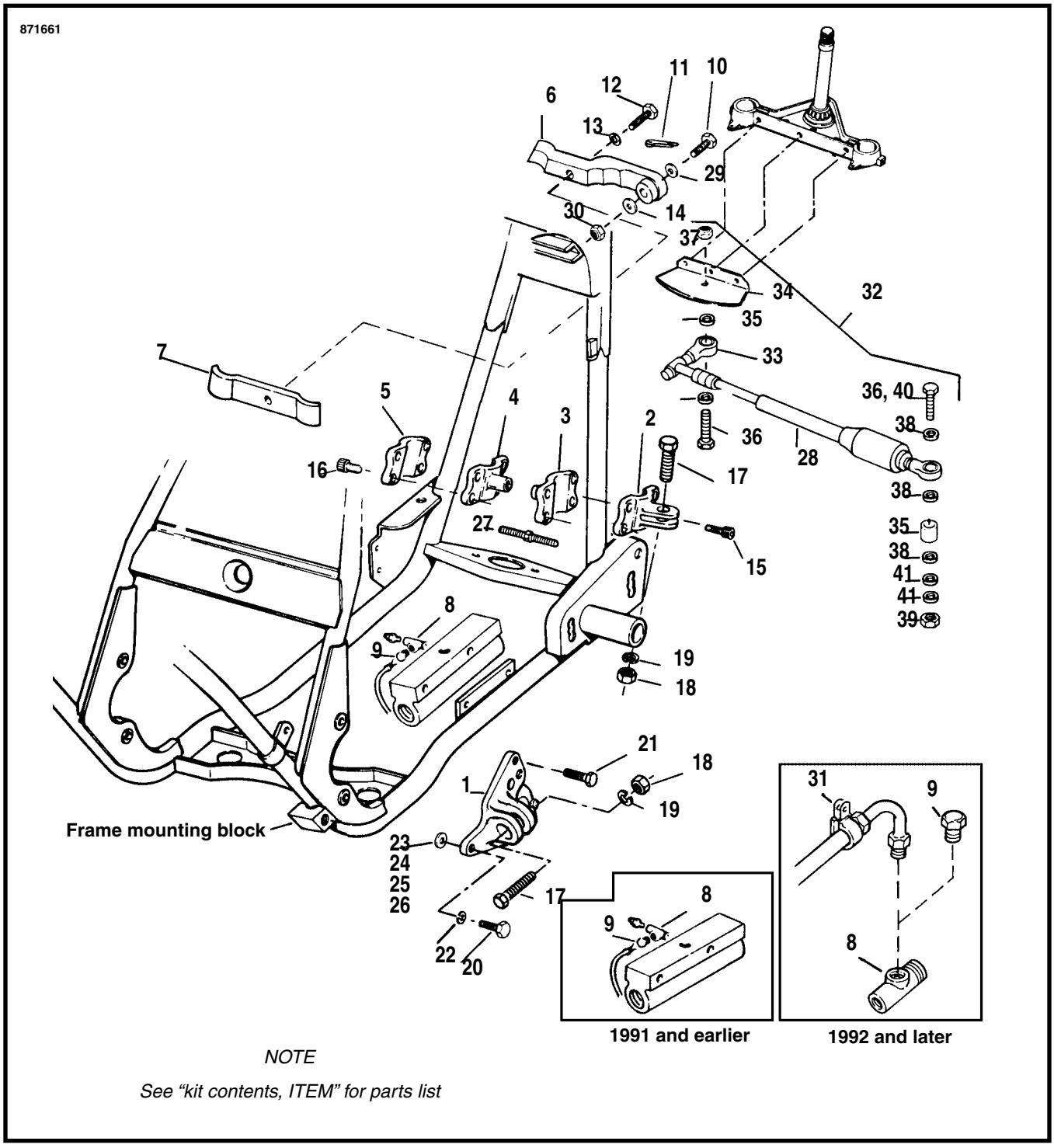

Figure 1. FLTC/FLHTC/TLE Sidecar Connection Kit

INSTALLATION

The 1984 and later FLT and FLHT’s have front air suspension. On 1987 and earlier models with front air suspension, the hose connecting the highway bar to the solenoid valve must be rerouted to prevent interference with the steering damper. If kit is being installed on a 1983 or 1988 and later model go to INSTALLING UPPER MOUNT.

Rerouting Air Suspension Hose (Figure 2)

NOTE

The parts for rerouting the air suspension hose are not furnished with this kit. To reroute the air suspension hose the following parts must be ordered through regular parts channels:

Hose-49060-84
Plug-45830-48
Tee-74423-68

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1. Loosen hose clamps at solenoid valve and highway bar and remove hose. Save hose clamps for attaching new hose.
2. Remove hose nipple from front of highway bar. Coat threads of plug (not furnished with kit) with Loctite Pipe Sealant with Teflon and install plug in hole from which hose nipple was removed.
3. Remove air valve from left-rear of highway bar.
4. Coat male threads of tee (not furnished with kit) with Loctite Pipe Sealant and install in highway bar.
5. Tighten the tee to a point where approximately one quarter turn will complete the tightening required and right angle opening is facing upward.
6. Coat threads of hose nipple, removed in Step 2, with Loctite Pipe Sealant and install in right angle opening of tee.
7. Apply Loctite Pipe Sealant to the threads and install the air valve, removed in Step 3, in the tee so it faces the rear of the motorcycle.
8. Slip hose clamp over end of hose (not furnished with kit) next to 90° bend.
9. Install hose on hose nipple and tighten tee until hose just touches frame.
10. See Figure 2. Route hose up along frame and forward to solenoid valve.
11. Slip hose clamp over hose end at valve and install hose on valve.
12. Tighten hose clamps, pressurize air suspension system and check for leaks.

Installing Upper Mount (Figure 3)

1. Position the rear half of the upper clamp (7) on the rear of the frame downtubes. The mount is self-aligning. Mount is correctly located when the grooves in the mount mate fully with frame tubes.
2. Move wiring harness so it will not be pinched in upper mount or contact exhaust pipe.
3. Place the front upper clamp in position and secure with bolt (12) and lockwasher (13). Tighten bolt to 50-60 ft-lbs torque.
4. Check that wiring harness is not pinched in mount.

Installing Front Lower Mount

1. Push cable straps, holding ignition module wiring harness to right frame downtube, upward and then disconnect connector. Move harness out of the way, taking care not to pinch harness when installing the front lower mount.
2. See Figures 4 and 5. Thread the stabilizer adjuster (29) into the right and left stabilizers. The stabilizers are marked with an “R” and “L” to indicate right and left, respectively. The right stabilizer has right hand threads. The left stabilizer has left hand threads.

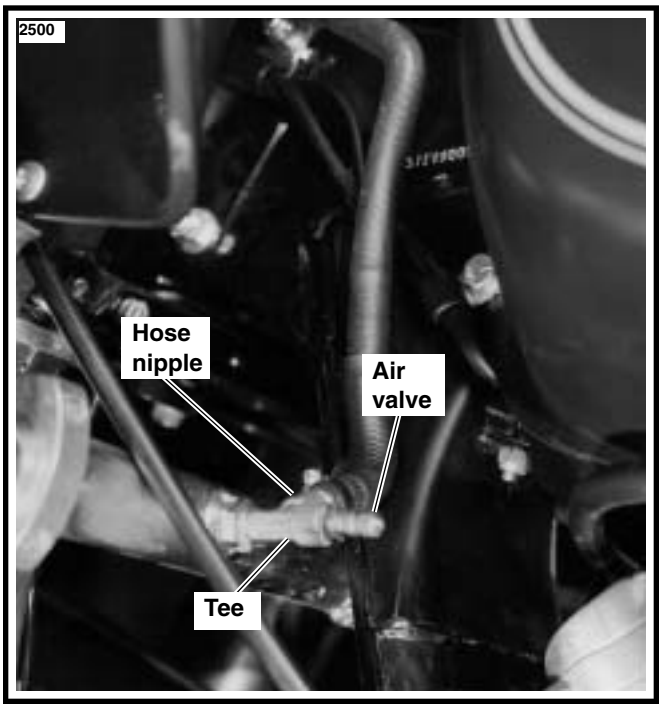

Figure 2. Rerouted Air Suspension Valve

Figure 3. Upper Clamp Installed

3. Place the stabilizer assembly between the frame downtubes from the backside.
4. Lightly tighten the stabilizer adjuster to hold the assembly in place.

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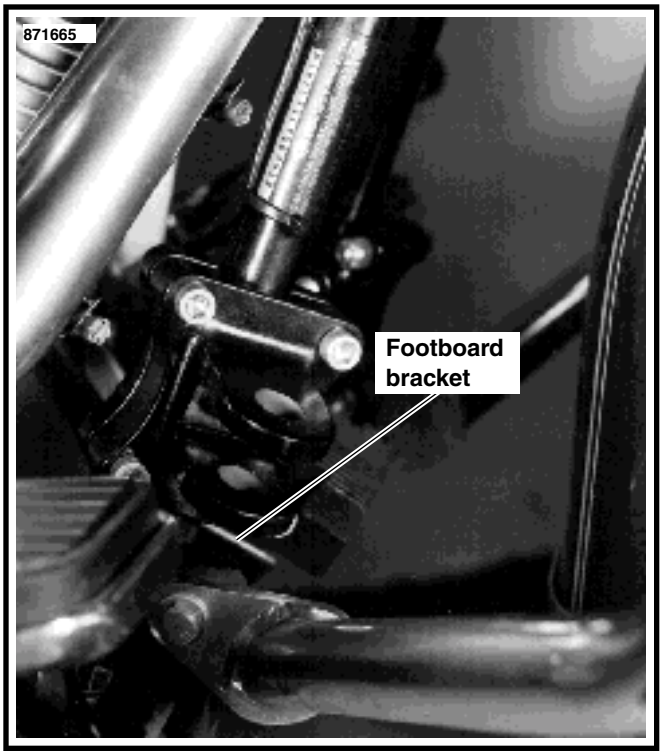


Figure 4. Lower Front Mount, Right Side

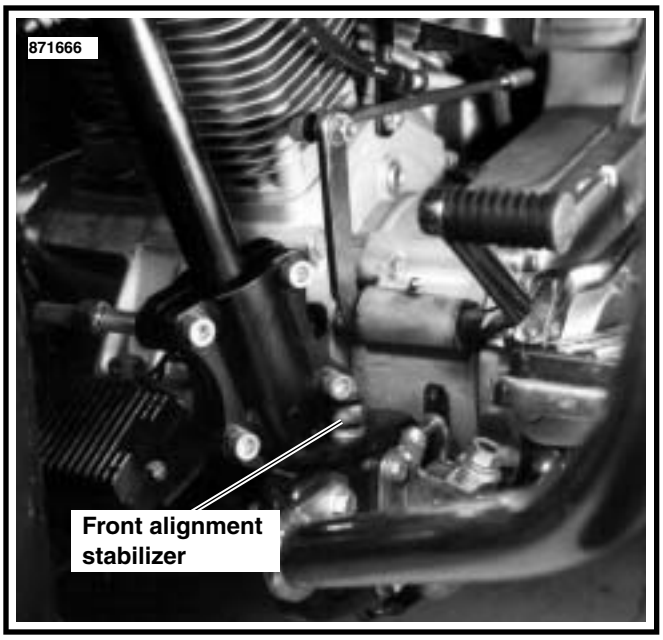


Figure 5. Lower Front Mount, Left Side

5. Position the lower front mount (2) on the right frame downtube opposite the right stabilizer. Insert four bolts (15) through mount and thread into tapped hole in stabilizer. Tighten finger tight.

6. Install backing plate (5) on left stabilizer with four bolts (17). Tighten finger tight.

7. See Figure 4. Check clearance between lower front mount (2) and footboard bracket and front exhaust pipe. Engine will move approximately 3/8 in. under normal operating conditions.

8. Position the entire front mount assembly so the clearance between the lower front mount (2) and footboard bracket is 1/4 - 1/2 in.

9. See Figure 5. Check clearance between backing plate (6) and front alignment stabilizer. Check that alternator to regulator wires are not pinched in left stabilizer.

10. Move entire front mount up if it interferes with front stabilizer or wires.

11. With a wrench, turn the stabilizer adjuster so the stabilizers press, not pull, firmly against the frame downtubes.

⚠CAUTION

Do not over-tighten stabilizer adjuster or frame downtubes will be forced apart.

12. Tighten the four bolts in each stabilizer to 35-40 ft-lbs torque.

13. Check that harness (sensor to ignition module) is not pinched in front mount. Also check that harness is not too close to front exhaust pipe.

Installing Rear Mount (on vehicles not factory equipped)

NOTE

The frame mounting block is not furnished with the kit. If the kit is to be installed on early 1991 and earlier vehicles, rear mounting block, Part No. 47902-83, must be ordered through normal parts channels.

1. Shut off fuel valve and run engine until gas in carburetor is used up. (Welding requires tilting motorcycle, and fuel could leak from overflow.)

2. Raise rear wheel and place supports under frame.

3. Remove right rear exhaust pipe shield and right muffler.

4. Remove left-exhaust pipe shield located behind rear cylinder head.

5. Remove right rear exhaust pipe.

6. Remove right side cover and both saddlebags.

7. Loosen and remove the two bolts and lockwashers securing the right passenger footrest bracket and remove the footrest and bracket.

⚠CAUTION

The frame mounting block must be positioned as shown in Figure 6 or the block could interfere with rear fork travel.

8. See Figure 6. Attach the frame mounting block and two 0.031 in. shims (23) to the rear mount assembly (1) with bolt (20) and lockwasher (22). Tighten bolt finger tight.

9. See Figure 1. Position rear mount assembly (1) so projection in rear mount enters alignment hole in rubber mount of pivot shaft (see Figure 7) and so groove in frame mounting block aligns with frame tube. Check that

the left rubber engine mount is correctly positioned with the left passenger footrest bracket.

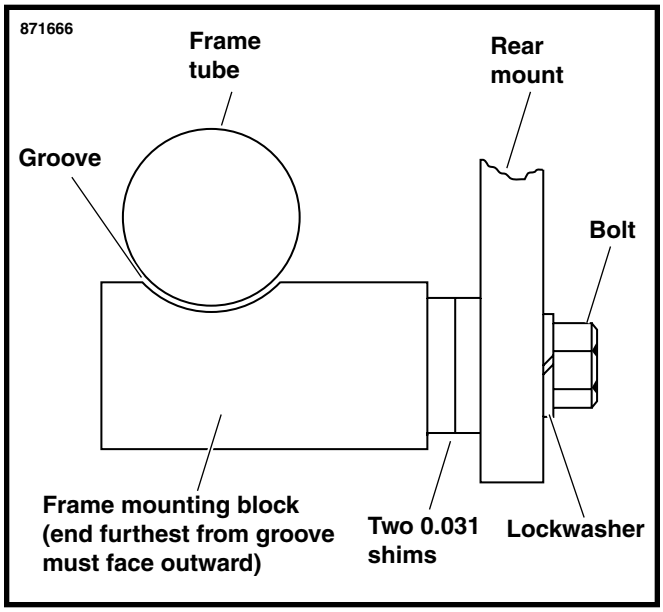


Figure 6. Positioning Mounting Block

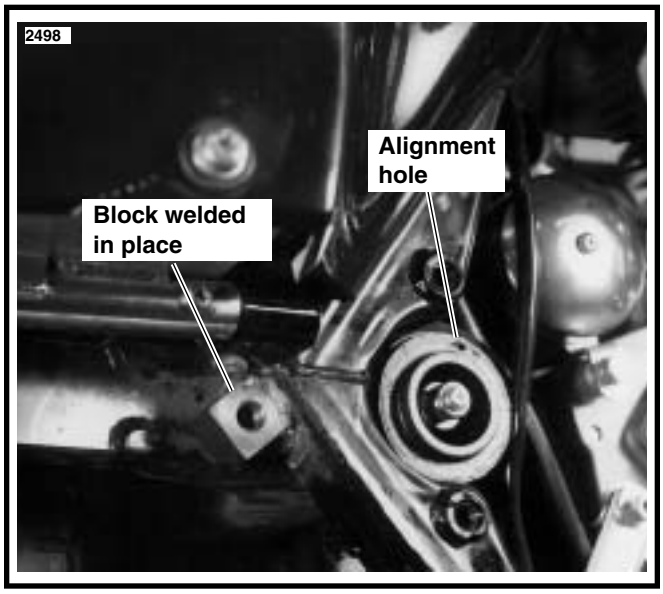


Figure 7. Frame Mounting Block Welding

10. Insert the bolts and lockwashers removed in Step 7 through the front holes of the rear mount assembly. Tighten to 34-42 ft-lbs torque.

11. Position frame mounting block so groove in block mates with frame tube and tighten bolt to hold it in position.

⚠WARNING

Before welding the mounting block to the frame tube, do the following:

A. Drain gasoline from fuel tanks and remove fuel tanks.

B. Remove battery.

C. Plug carburetor overflow tube with a golf tee or other suitable plug.

Failure to follow Steps A, B, and C could result in an explosion and/or fire and personal injury.

12. Tack weld block to frame tube using a metal-inert gas (mig) wire welder and welding wire conforming to American Welding Society (A.W.S.) Standard E70S-G. Welding wire conforming to Standard E70S-G is available from the following manufacturers:

Manufacturer	Wire Designation
Brite-Weld International	ER70S-G
Welding Products Interweld	ER70S-G
Linde (Union Carbide)	H1 -84
SLM Industries	70-S-G
Westinghouse	MS-32

Recommended welding wire diameter and welder settings are:

Wire diameter - 0.030 or 0.035 in.
Welder mode - Short Circuiting Process
Welder voltage - 15-16 volts
Welder current - 40-55 amps

13. After tack-welding the block, remove the three bolts securing the rear mount. Remove the mount.

14. Insert a bolt into the mounting block to keep weld spatter from entering the tapped hole.

15. Weld the top, outside end and bottom edges of the mounting block to the frame.

16. To gain access to the inner edge of the block (next to swing arm) perform Steps 17 through 19.

17. Place a strap or rope under the frame beneath the seat and support the motorcycle from a beam or overhead crane. This will allow the motorcycle to be tilted for welding in Step 20.

18. Loosen the top shock absorber mounting bolts and remove the bottom shock absorber mounting bolts.

19. Move shock absorbers to the rear and lift rear wheel and swing arm so inner edge of block is accessible for welding.

20. Weld inner edge of mounting block to frame. It may be necessary to tilt the motorcycle to the right to weld the inner edge of the block. Figure 7 shows block welded in place.

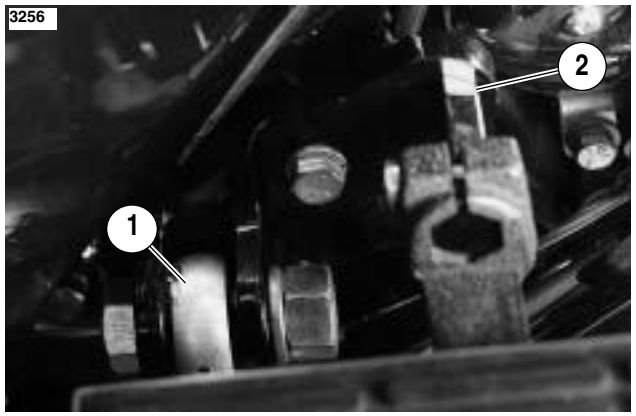
⚠WARNING

The frame mounting block must be securely welded to the frame tube at all mating surfaces (all around block). Poor welding or neglecting to weld all around block could result in the block tearing loose and the possibility of an accident and personal injury. We strongly recommend that the welding be performed by an experienced and highly competent welder.

21. After weld has cooled, paint block and weld area with Hi-Gloss Black paint, Part No. 98606 C.

22. Position the rear mount over the three mounting holes and be certain roll pin enters the alignment hole in the rubber mount. Again, check the left pivot shaft rubber mount to be sure it is in place.

23. Take one of the lockwashers removed with right footrest bracket and place over bolt (22). Insert bolt (22) through clamp (33), passenger footboard mount (28), through upper hole in rear mount (1) and thread into upper tapped hole in frame. Take one of the bolts and the remaining lockwasher removed with right footrest bracket and place the washer over the bolt. Insert the bolt through the bottom front hole in rear mount and thread into lower hole in frame. Tighten both bolts to approximately 20 ft-lbs torque.



1. Rear mount **2. Passenger footboard mount**

Figure 8. Rear Mount Installed

24. Use the SPACER and “shim” the gap between the mounting block and rear mount.
25. Insert bolt (20) with lockwasher (22) through mount (1) and block. Tighten the three mounting bolts to 34-42 ft-lbs torque. Figure 8 shows rear mount installed.
26. Reinstall lower shock absorber bolts and tighten upper bolts to 33-35 ft-lbs torque and lower bolt to 50-60 ft-lbs torque.
27. Install muffler, exhaust pipe, exhaust pipe shields, right side cover, fuel tanks, battery and saddlebags.

Attaching Steering Damper Bracket

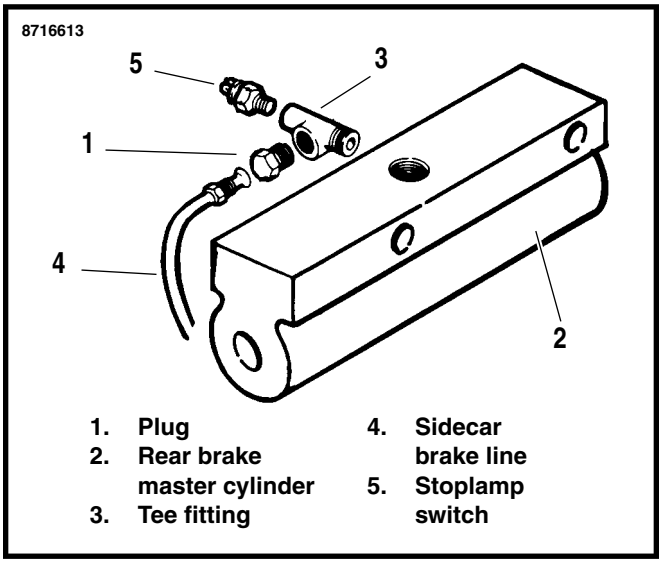
1. Remove the three bolts, washers and lockwashers securing the air deflector to the lower triple clamp under front forks and remove the air deflector. Retain air deflector to be installed when sidecar is not attached.
2. Install bracket (34) using the three bolts removed in Step 1. Tighten bolts to 8-10 ft-lbs torque.
3. Refer to the Sidecar Service Manual for instructions for attaching and adjusting the steering damper.

Installing Tee in Master Cylinder - 1991 and Earlier (Figure 9)

NOTE

When installing this connection kit on vehicles 1991 and earlier, it will be necessary to order brake line 87776-93. The 1993 connection kit contains a brake line that is designed to fit the 1992 and later brake system and is not adaptable to earlier brake systems. See chart at end of this Instruction Sheet.

1. Remove stoplight switch (5) from rear master cylinder.
2. Coat male threads of tee (3) with Loctite Pipe Sealant with Teflon and install in master cylinder so right angle opening faces the rear of the motorcycle.



1. Plug
2. Rear brake master cylinder
3. Tee fitting
4. Sidecar brake line
5. Stoplamp switch

Figure 9. Sidecar Brake Line Connection - 1991 and Earlier

3. Reinstall the stoplight switch at tee in rear master cylinder.
4. If sidecar is not being attached, install plug (1) in the right angle opening.

⚠WARNING

When sidecar is installed, remove right rear directional bulb on cycle. If bulb is not removed, sidecar directional signal will not operate. When directional bulb on motorcycle is removed, sidecar directional signal will operate. Nonfunctional directional signals could endanger the rider.

5. Bleed rear brake system following the procedure in the appropriate Service Manual and check for leaks.

Installing Tee in Frame Bracket - 1992 and Later

1. See Figure 10. Remove stoplamp switch (1) from fitting (3) at frame bracket.
2. Coat male threads of tee (2) with Loctite Pipe Sealant with Teflon. Thread tee (2) into fitting (3) and tighten so that right angle opening is vertical.
3. Coat threads of stoplight switch (1) with Loctite Pipe Sealant with Teflon. Thread switch into end of tee (2).
4. If sidecar is not being attached, install plug (4) in the right angle opening.

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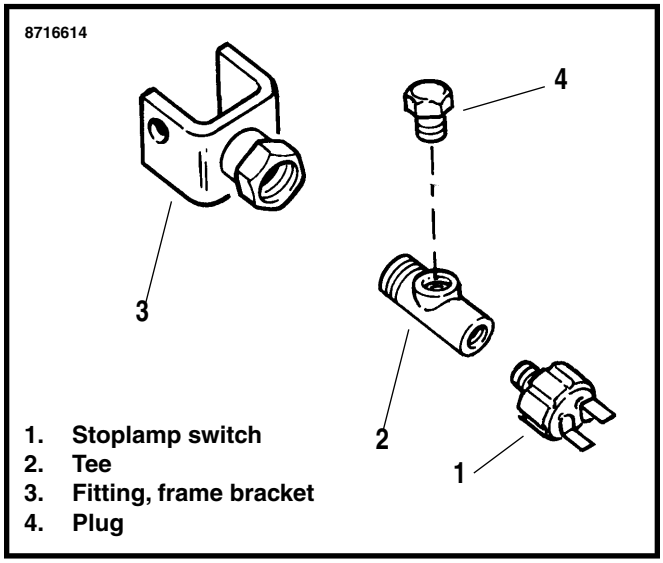
NOTE

Items 18, 19, 20, 30, 37, 38, 39, and 40 contained in the Sidecar Connection Kit must be installed while attaching the sidecar to the motorcycle. See Sidecar Service Manual for installation procedures for the above items. Refer to figure 1 and Kit Contents for illustration and description of the above items.



1. **Stoplamp switch**
2. **Tee**
3. **Fitting, frame bracket**
4. **Plug**

Figure 10. Sidecar Brake Line Connection - 1992 and Later

Installing Right Passenger Footboard

See Figure 11. If your motorcycle is equipped with a 1993 footboard assembly, use the footboard attaching hardware to fasten the footboard to the rear mount assembly (1, Figure 1). Adjust footboard to suit the passenger and install and tighten bolt to 20 ft-lbs torque.

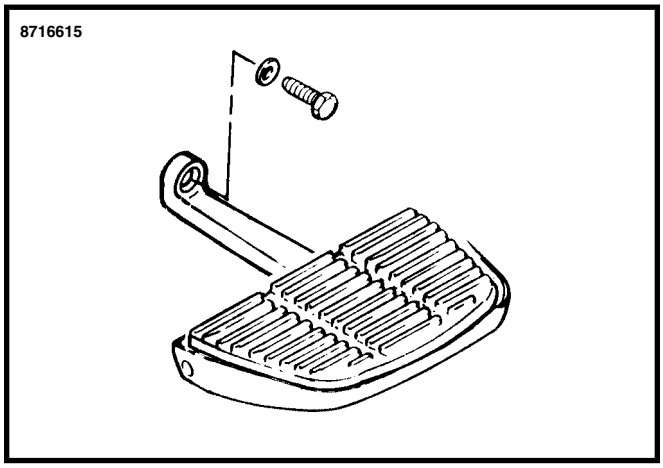


Figure 11. Right Passenger Footboard Motorcycle and Mounting

NOTE

If your motorcycle is a 1986 to 1992 model, you must purchase a footboard support and related parts and install it.

PARTS:

Footboard support 52719-93
Bolt 2851
Lockwasher 7038

Steering Damper Mounting Kit, Part No. 87142-83

The contents of this kit are listed as item numbers 35 through 40 in the Kit Contents list of the TLE Sidecar Connection Kit. To install the steering damper bracket, follow the procedure “Attaching Steering Damper Bracket” given in the TLE Sidecar Connection Kit section. Installation of the remaining parts and adjustment is covered in the Sidecar Service Manual.

NOTE

The steering damper (27) and rod end (35) have M10 x1.5 metric threads.

TLE Ultra Sidecar (Figure 14)

GENERAL

The TLE-ULTRA SIDECAR utilizes the same attaching kit as the TLE sidecar. There are, however, additional wiring harnesses that need to be installed to connect the sidecar light harness and the radio. See INSTALLATION - 1989 to 1990 MODELS or 1991 - 1992 or 1993 MODELS WIRING HARNESSES.

Installing Wiring Harness (1992 and Earlier) - General

NOTE

- *The sidecar harness is included with the sidecar and is not part of the connection kit.*
- *In 1992 the DIN connector was changed from a 3-pin to a 7-pin connector. There are adapters available. See chart at the end of this Instruction sheet. If you install a 1992 or later sidecar on a 1990 to 1991 motorcycle, use appropriate adapters.*

⚠WARNING

Disconnect the battery cables (negative cable first) to prevent accidental start-up of motorcycle and possible personal injury.

1. On 1992 and earlier vehicles, remove left side cover and motorcycle seat.
2. See Figure 12. Separate socket housing from pin housing mounted in panel under left side cover.
3. Check the pin housing to determine if connector is six pin or eight pin. Six pin connectors were used during model years 1983-1985. Eight pin connectors were used on vehicles 1986 and later.
4. If the connector is eight pin, proceed to step 7. If connector is six pin, separate the pin and socket terminals from the two housings using PIN TERMINAL TOOL, Part No. HD-97362-71.

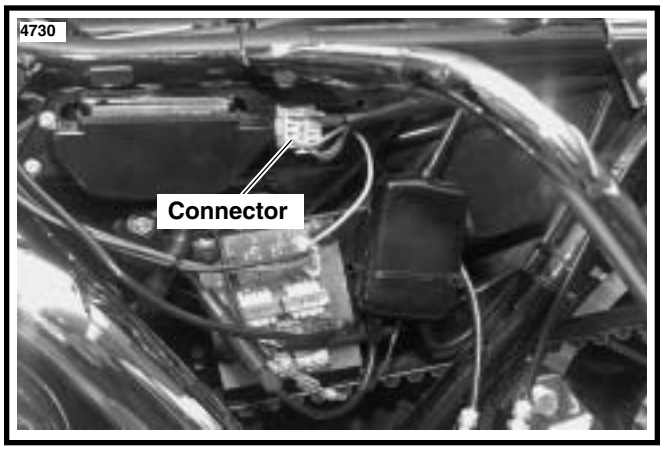


Figure 12. 1992 and Earlier Connector Location (Left Side Cover Removed)

⚠WARNING

Installing pins or sockets in wrong locations in connector housings will result in lights, at motorcycle rear fender and/or sidecar, to be inoperative or to operate incorrectly. If this condition is not corrected prior to operating vehicle, an accident could result.

5. See Figure 13. Insert the pin terminals removed from the six pin housing into the eight pin housing in the hole locations shown. Insert the socket terminals removed from the six socket housing into the eight socket housing in the hole locations shown. If the vehicle is equipped with a tour-pak, the tour-pak light socket terminal is inserted into the eight socket housing in the location shown.

6. See Figure 12. On 1992 and earlier vehicles, press the eight pin housing into the mounting hole in the metal panel under the side cover. Enlarge the hole to fit the eight pin housing, if necessary. See Figure 17. On 1993 vehicles, the connector is under the seat.

7. Locate the sidecar harness. Join socket connector to pin connector. Join socket connector to pin connector.

8. See Figure 15. Route the sidecar harness and secure with cable straps, as shown. Install motorcycle seat and left side cover. Check to be certain motorcycle and side car lights are operating correctly.

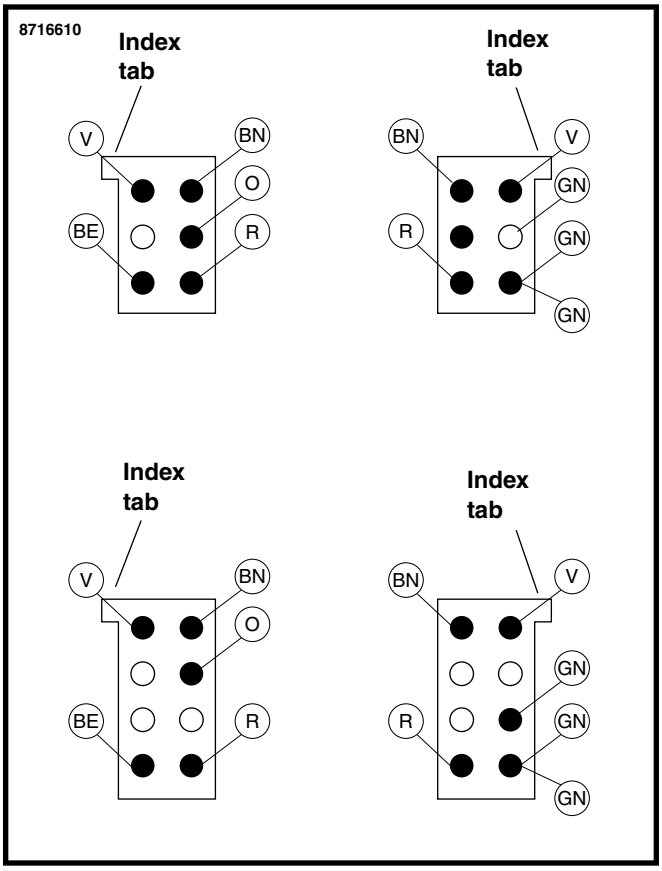


Figure 13. Converting 6 Pin Connectors to 8 Pin Connectors

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INSTALLATION - 1989 to 1990 Ultra Models

Light Harness

1. Remove left side panel. Remove seat. See Inset 1A of Figure 14. Locate socket connector half (K) under side panel. Separate socket connector (K) from pin connector (L). Take socket connector (LL) of Light Harness and connect to pin connector (L) at vehicle side panel. Take pin connector (KK) at light harness and connect to socket connector (K) at vehicle. Connect pin connector at end of side car light harness to receptacle at end of vehicle light harness

2. Remove bulb from right rear motorcycle turn signal and install in sidecar turn signal.

NOTE

Motorcycle right rear directional lamp receptacle is left empty (no bulb) when sidecar is in use.

Radio Harness

1. Route radio harness as instructed under ROUTING RADIO HARNESS. See Inset 1E of Figure 14. Locate the ten pin connector on top of the rear fender under the Tour-pak. Separate connector halves (A) and (B) at vehicle. Pack socket connector halves (A) and (BB) with Electrical Contact Grease Part No. 9986190. Connect the ten pin connector (AA) of radio harness to ten socket connector (A). Connect the ten socket connector (BB) of radio harness to ten pin connector (B)

2. See Inset 1C of Figure 14. At the opening under the seat, locate the three pin Din connector halves (F) and (G) and the grounding connector halves (H) and (J). Separate Din connector halves (F) and (G) and the grounding connector halves (H) and (J). Connect the three socket Din connector (FF) of radio harness to three pin Din connector (F) at the vehicle. Connect the three pin Din connector (GG) of the radio harness to three socket Din connector (G). Wrap a piece of friction tape around Din connectors where halves join. Connect grounding connectors (JJ) and (HH) of radio harness to the mating grounding connectors (J) and (H) at the vehicle.

3. See Inset 1D of Figure 14. Directly under the cruise control servo motor, locate unattached single socket (C) on a black wire pigtailed off at connector joining two black wires. Connect single socket connector (CC) of radio harness to single pin connector (C) at vehicle.

4. See Inset 1 B of Figure 14. Locate the ten pin connector (D) and (E) at the front of the opening under the seat separate connector halves (D) and (E). Insert single pin (EE) of radio harness into the fourth hole from the tab at the wire side of socket connector (E). Pack socket connector (E) with Electrical Contact Grease, Part No. 99861-90. Join connector halves (D) and (E).

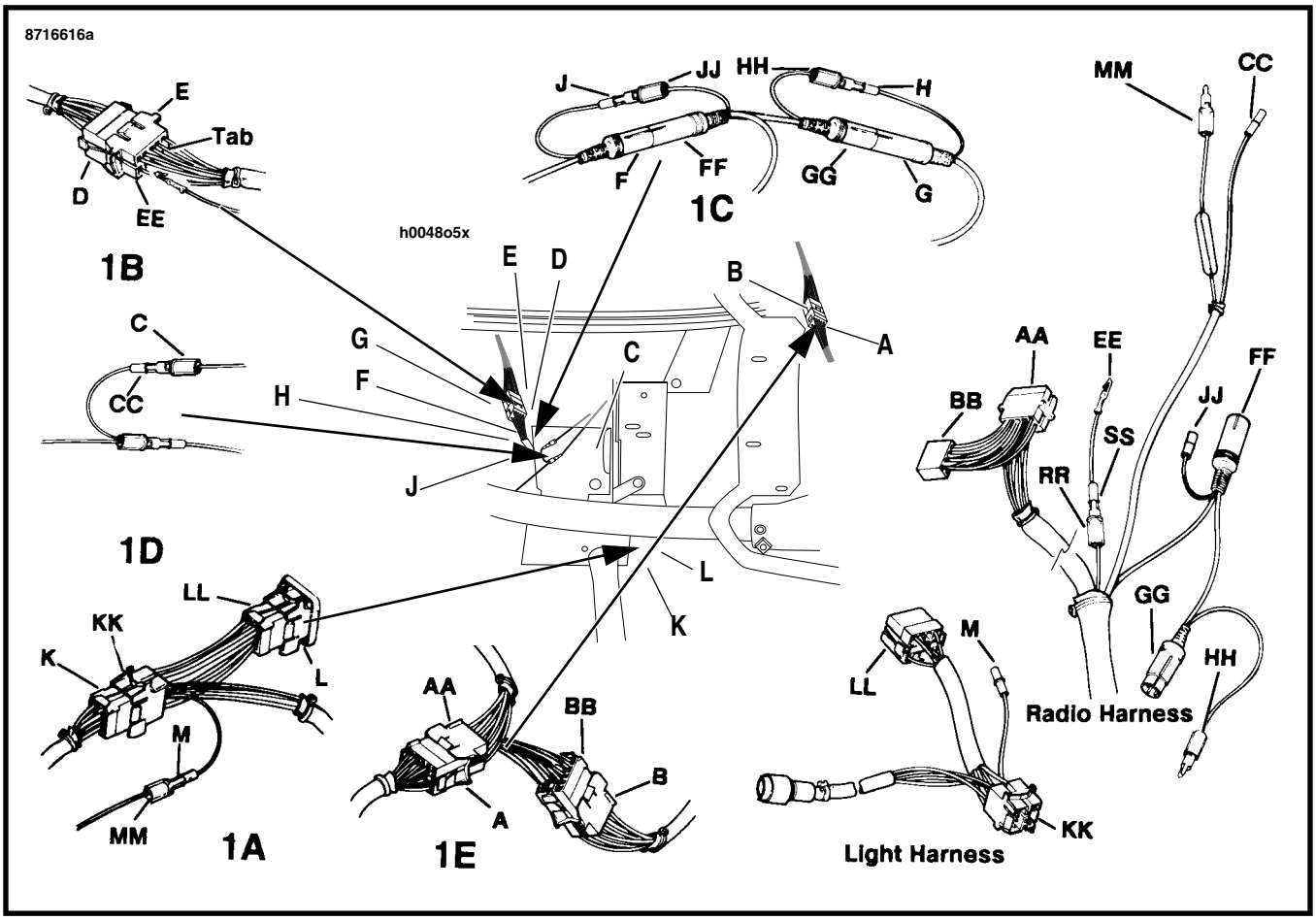

Figure 14. Tle Ultra Wiring Harness - 1989 to 1990

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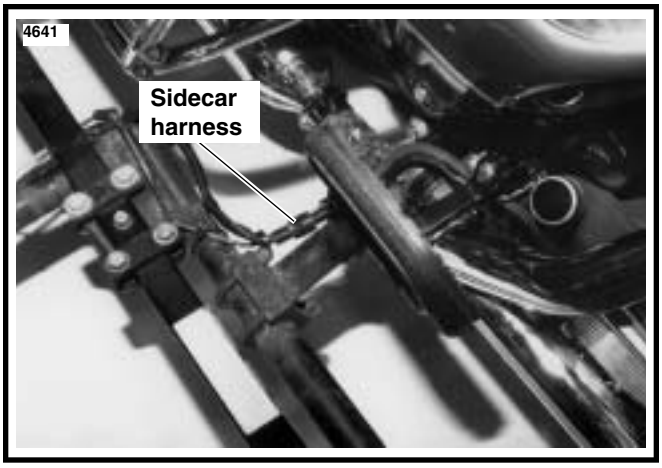

Figure 15. Sidecar Harness - 1992 and Earlier

NOTE

Once single pin (EE) is installed, it is not removed from connector (E) for solo service. See Radio Harness, Figure 14. When connecting the radio harness for sidecar service after initial set-up, join the connector halves (RR) and (SS).

ROUTING LIGHT HARNESS

Connect harness to vehicle as instructed under INSTALLATION, LIGHT HARNESS.

Direct free end of harness around backside of side panel, under seat cross member and forward under cruise control module mounting plate. Exit end of cable at front side of oil tank. Lead harness around oil tank and down saddlebag bar. Light harness is attached with cable straps to vehicle with radio harness. See ROUTING RADIO HARNESS.

ROUTING RADIO HARNESS

If not already done, remove seat, left side cover and battery.

1. Direct loose end of harness, with connectors, around oil tank, under the cruise control module mounting plate and up through opening under seat.
2. Direct leads with connectors (M) and (BB) to rear fender. Bring the remaining connectors forward, with the exception of the orange wire with connector (MM).
3. Bring lead with connector (MM) back under seat cross member around right side of side panel. Make connections as instructed under INSTALLATION, RADIO HARNESS.

1991-1992 MODELS WIRING HARNESSES

LIGHTING

Behind left sidecover:

See Figure 12. Connect 8-place rear lighting connector, [SC22B to 22A] and lighting connector, [SC22A to 22B].

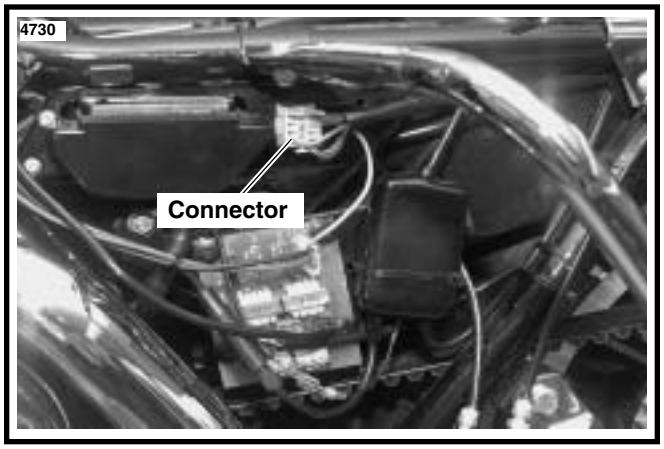

Figure 16. 1992 and Earlier Connector Location (Left Side Cover Removed)

AUDIO

Under motorcycle seat:

See Figure 17. Connect the two 8-place connectors, [SC15A to 15B] and [SC15B to 15A].

NOTE

Figure 17 shows a 1993 vehicle, but the connector [SC15A, B] is in the same location for the 1991-1992 vechicles.

Behind left side cover:

Connect single place amp terminal on Orange wire to the pigtail on the 8-place sidecar lighting connector, [SC22A].

On ground bolt, behind fuseboard, under seat:

Connect one single place amp terminal on Black wire to the connector on the pigtail.

TO:

Behind tank, under seat:

1992 - Connect 7 pin DIN to sidecar “Y” DIN connector.

1991 - Connect 3 pin DIN with ground jumper to sidecar “Y” DIN connector.

Wrap DIN connectors with black electrical tape (late 1992 models have sealed DIN connector, require no tape).

1993 MODELS WIRING HARNESSES

LIGHTING

Behind left sidecover:

See Figure 12. Connect 8-place rear lighting connector, [SC22B to 22A] and lighting connector, [SC22A to 22B].

AUDIO

In front of battery under seat:

See Figure 17. Connect the two 8-place connectors, [SC15A to 15B] and [SC15B to 15A].

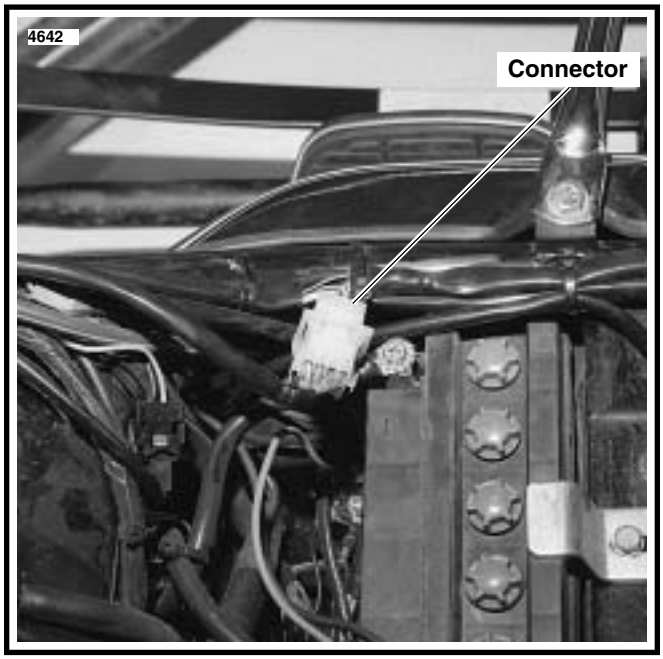

Figure 17. Connecting Sidecar Harness - 1993 Shown

Main circuit breaker in front of battery:

See Figure 18. Connect one Orange wire ring terminal to main circuit breaker silver stud, (fused wire for sidecar cigarette lighter).

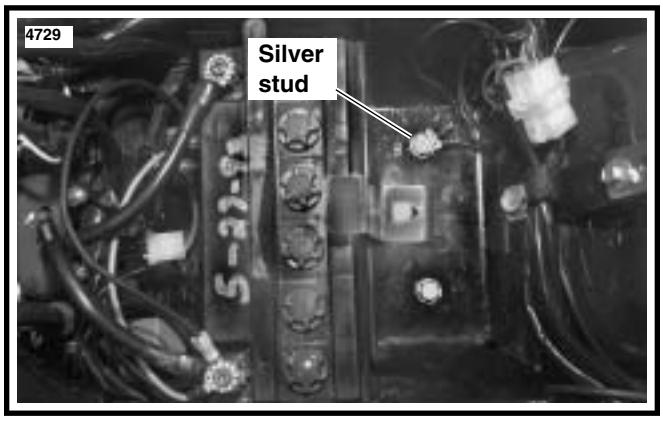

Figure 18. Main Circuit Breaker Silver Stud

TO:

Stud on top frame brace under seat:

Ring terminal for sidecar audio ground (BK)

Behind left side cover:

Connect single place amp terminal on Orange wire to the pigtail on the 8-place sidecar lighting connector, [SC22A].

TO:

Behind tank, under seat:

Connect 7 pin DIN to sidecar “Y” DIN connector. (sealed DIN connector, requires no tape).

1994 MODELS WIRING HARNESSES

⚠WARNING

To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables (negative cable first) before performing any of the following procedures.

SIDECAR LIGHT HARNESS

1. See Figure 20. Route light harness in front of the battery, under frame member, over top of cruise control module on left side, to the motorcycle rear light harness. Disconnect the motorcycle rear light harness.

2. Connect the sidecar “Y” connector to the motorcycle rear light harness. Be sure latches snap together.

3. “Gang” the two connectors and clip the inside connector to the frame “T” stud. Do not tie wrap at this time.

4. See Figure 19. Connect the lower harness connector, between the sidecar and motorcycle. Tie wrap to frame as shown in figure 21.

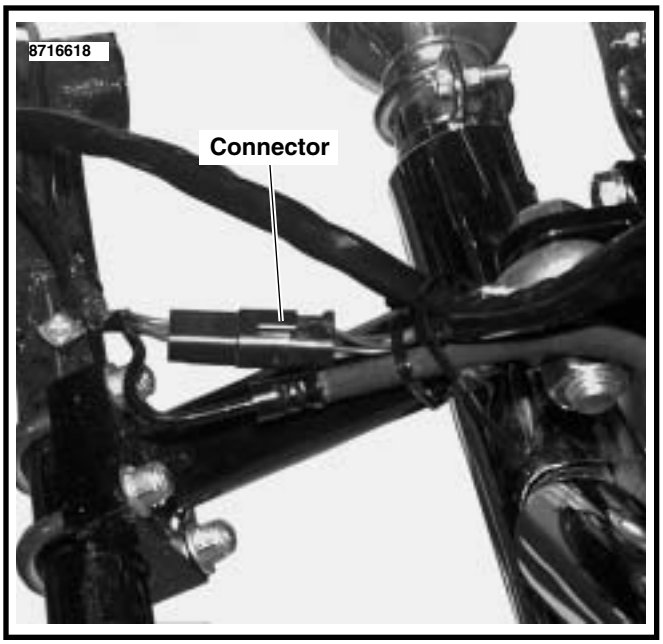

Figure 19. 1994 Lower Harness Connector

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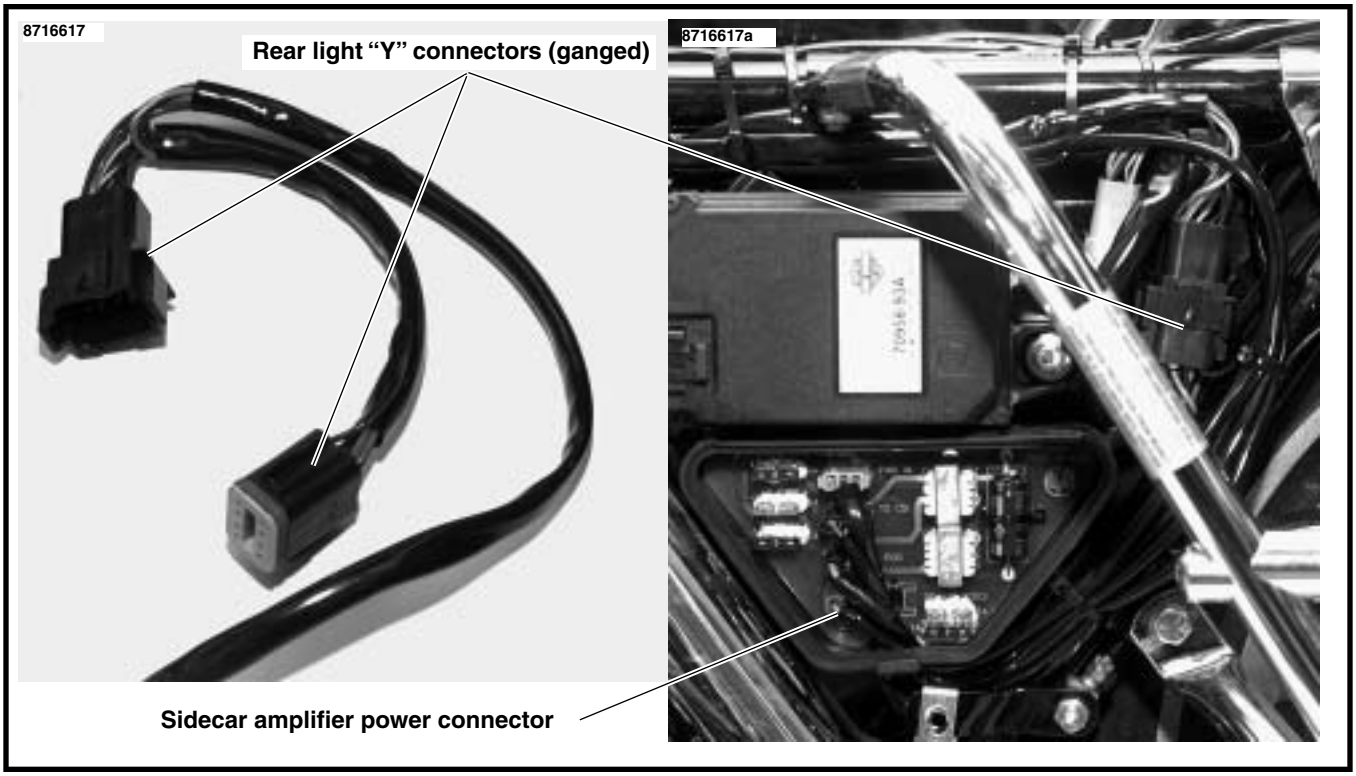

Figure 20. 1994 Sidecar/Motorcycle Rear Light Harness

SIDECAR AUDIO HARNESS

1. See Figure 21. Route harness from sidecar, over the inside spring. Tie wrap to the rear spring support bracket and in three places on leaf spring. Route up frame member, in front of battery.
2. See Figure 22. Disconnect motorcycle audio harness connector [52]. Disconnect motorcycle DIN connector [49].
3. Connect sidecar audio "Y" connector [SC52A&B] to motorcycle audio connector [52A&B]. Connect sidecar "Y" DIN connector [SC49A&B] to motorcycle DIN connector [49A&B].
4. Route sidecar amplifier power harness [SC68B] and connector under frame member, alongside sidecar light harness, over the top of cruise control module on left side, and around the rear of the fuse box, with the other harnesses.
5. Plug amplifier power connector [SC68B] into connector in fuse box [68A].
6. Cut tie wraps holding motorcycle rear light harness. Install new tie wraps securing sidecar light harness, motorcycle rear light harness and sidecar amplifier harness.
7. Move the ACC. connector to the upper "T" stud and clip one of the audio connectors to the lower "T" stud. Wedge the other connector next to it.
8. Stuff the DIN connectors on top of the ACC. connector.
9. Connect the cigarette lighter wire connector to the SILVER stud on the main circuit breaker.
10. Install battery, side cover and seat.

Figure 21. Sidecar Harness Routing

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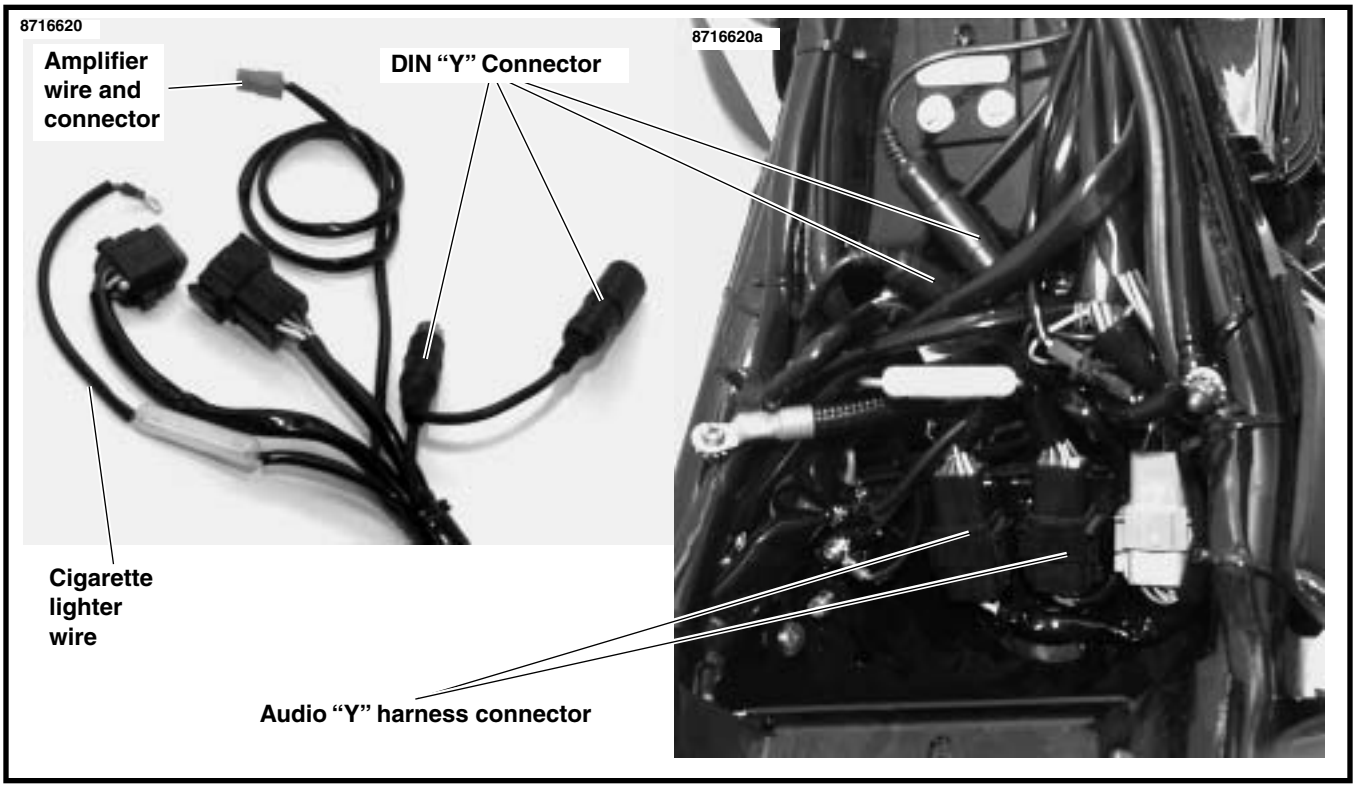

Figure 22. 1994 Sidecar Audio Harness

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FLHTC/U SIDECAR FAIRING LOWER

ASSEMBLY

1. See Figure 23. Place the lower portion of the fairing lower (1) in position and install the U-bolt (2), retainer (3) and nuts (4).
2. Place the retaining clamp (5) on the engine guard and install the nut (6), bolt (7) and washer (8).
3. Slip the crimp nuts (9) into the holes provided in the lower portion (1).
4. Place the upper portion (10) of the fairing lower onto the lower portion. Align the holes with the crimp nuts (9) and install the screws (11).

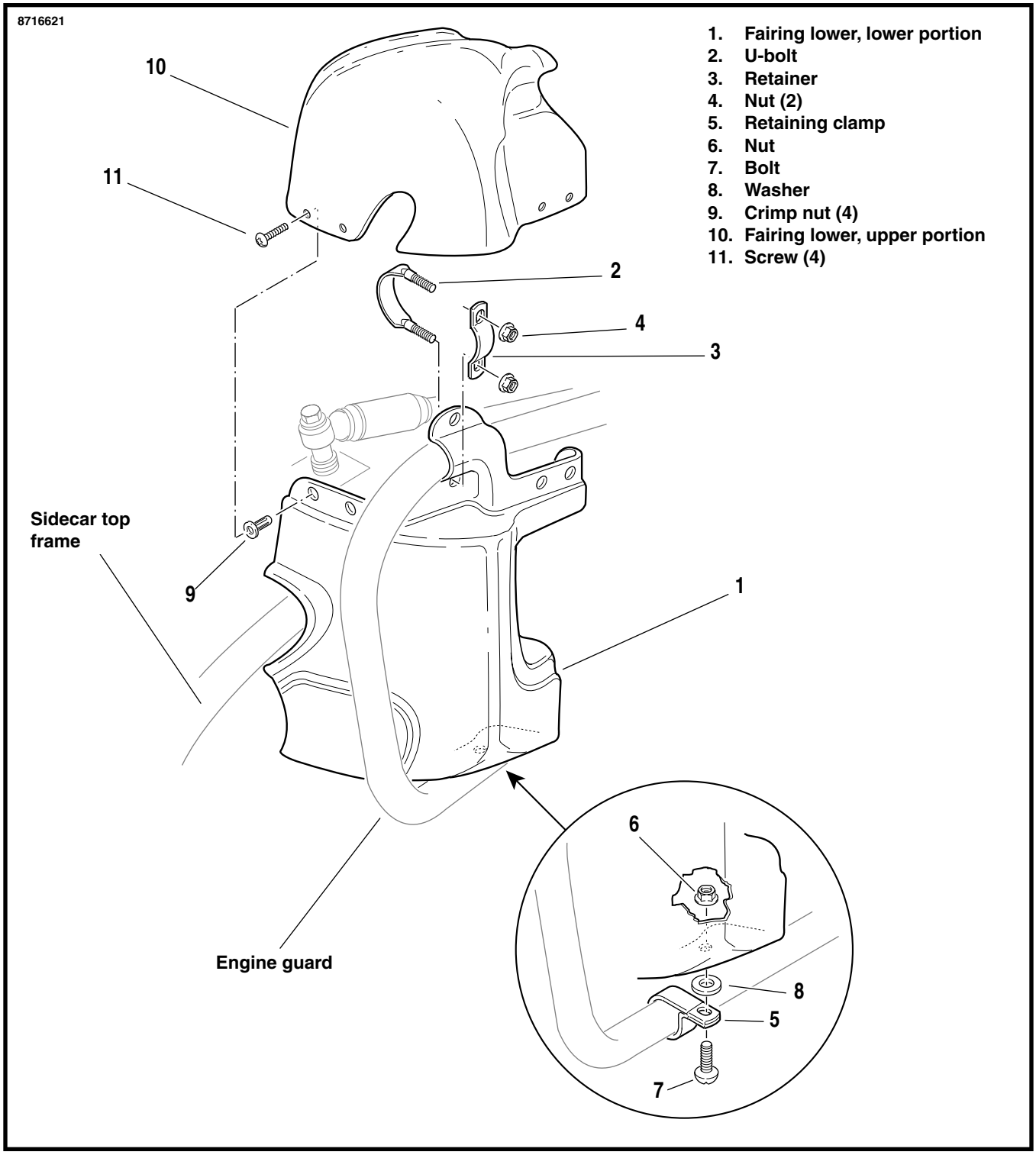

Figure 23. FLHTC Sidecar Fairing Lower

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SADDLEBAG - SIDECAR MODEL

NOTE

See Figure 24. The inside saddlebag lid for motorcycles equipped with sidecars does not have a nylon check strap and the latch is not attached to the lid. This feature allows easier access to the saddlebag; however, be sure the lid is securely fastened before operating vehicle.

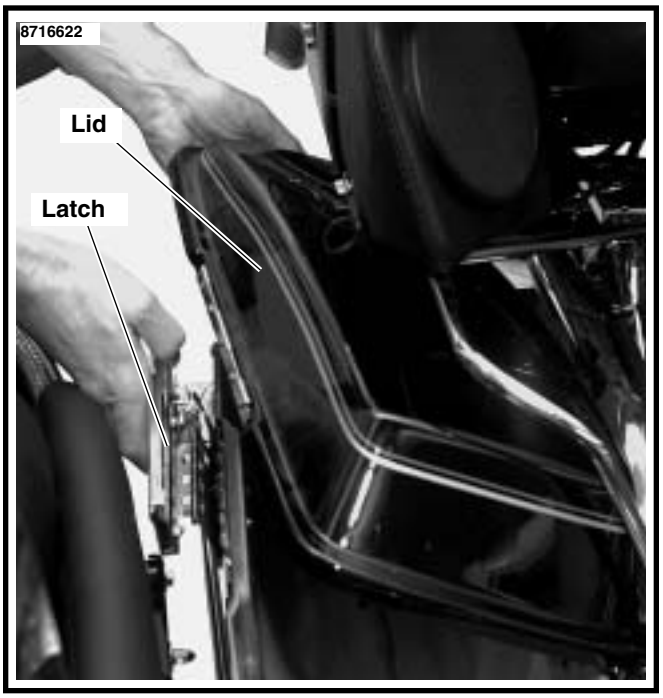

Figure 24. 1994 Sidecar Saddlebag

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Many different years of TLE sidecars can be attached to many different years of FLT model motorcycles, using adapter kits. The chart below shows which kits to use.

FLT/TLE/TLE ULTRA SIDECAR ADAPTER KITS

ULTRA MOTORCYCLE MODEL YEAR	TLE-ULTRA SIDECAR MODEL YEAR	REQUIRED KITS		NOTES & EXCEPTIONS
1989-1990	1991	87166-83C 87550-92	Connection Kit Wiring Interface	1 2
1989-1990	1992-1993	87166-83C 87776-83 87550-92 87559-94	Connection Kit Brake Line Kit Wiring Interface DIN adapter	1 3 2 4
1989-1990	1994	87166-83C 87776-83 70058-94 87554-94 87555-94 87559-94	Connection Kit Brake Line Kit Light harness Wiring Interface Power adapter DIN adapter	1 3 5 6 7 4* (exception)
1991	1989-1990	87166-83C 87552-92	Connection Kit Wiring Interface	1 8
1991	1992-1993	87166-83C 87776-83 87553-92	Connection Kit Brake Line Kit DIN adapter	1 3 9
1991	1994	87166-83C 87776-83 70058-94 87555-94 87556-94 87559-94	Connection Kit Brake Line Kit Light harness Power adapter Wiring Interface DIN adapter	1 3 5 7 10 4** (exception)
1992	1989-1990	87776-92 87166-93 87552-92 87553-92	Brake Line Kit Connection Kit Wiring Interface DIN adapter	11 12 8 9
1992	1991	87776-92 87166-93 87553-92	Brake Line Kit Connection Kit DIN adapter	11 12 9
1992	1993	87776-92 87166-93	Brake Line Kit Connection Kit	11 12
1992	1994	87166-93 87776-92 70058-94 87555-94 87556-94	Connection Kit Brake Line Kit Light harness Power adapter Wiring Interface	12 11 5 7 10*** (exception)
1993	1989-1990	87166-93 87776-92 87552-92 87553-92	Connection Kit Brake Line Kit Wiring Interface DIN adapter	12 11 8 9

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FLT/TLE/TLE ULTRA SIDECAR ADAPTER KITS

ULTRA MOTORCYCLE MODEL YEAR	TLE-ULTRA SIDECAR MODEL YEAR	REQUIRED KITS		NOTES & EXCEPTIONS
1993	1991	87166-93 87776-92 87553-92	Connection Kit Brake Line Kit DIN adapter	12 11 9
1993	1992	87166-93 87776-92	Connection Kit Brake Line Kit	12 11
1993	1994	87166-93 87776-92 70058-94 87556-94	Connection Kit Brake Line Kit Light harness Wiring Interface	12 11 5† (exception) 10†† (exception)
1994	1989-1990	87166-93 87776-92 70028-94 70058-94 87557-94 87558-94	Connection Kit Brake Line Kit Light harness Light harness Wiring Interface Power adapter	12 11 14 15 13 16
1994	1991	87166-93 87776-92 70028-94 70058-94 87553-92 87556-94 87558-94	Connection Kit Brake Line Kit Light harness Light harness DIN adapter Wiring Interface Power adapter	12 11 14 15 17 18 16
1994	1992-1993	87166-93 87776-92 70028-94 70058-94 87556-94	Connection Kit Brake Line Kit Light harness Light harness Wiring Interface	12 11 14 15 18
1993-1994 (Japan)	1994	87560-94	Power adapter	
NON-ULTRA SIDECAR/MOTORCYCLE COMBINATIONS				
1994 FLTC, FLHTC	Pre-1994 sidecar	87776-92 87166-93 70054-94	Brake Line Kit Connection Kit Lighting Harness	11 12 ††† (exception)
Pre-1994 FLTC, FLHTC	1994 sidecar	87776-92 87166-93 70058-94	Brake Line Kit Connection Kit Lighting Harness	11 12 5

See NOTES, following table.
See EXCEPTIONS, following NOTES.

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NOTES

NOTE 1. **Connection Kit** - This kit contains the mechanical components needed to connect the sidecar to the vehicle. The kit has an instruction sheet that also covers how to hook up the sidecar's basic lighting wiring harness.

NOTE

The Instruction Sheet for the connection kit does not detail the harness changes for 1994.

NOTE 2. **Wiring Interface** - This harness has 3 Amp connectors, 2 each of 10 places and 1 each of 8 places. Both 10 place connectors are inserted into the vehicle's harness at connectors 15A/B located under the seat. The remaining 8 place connector is coupled with SC-15B on the sidecar's harness. Connector SC-15A is left unused and its exposed pins should be packed with electrical contact grease and protected from damage.

NOTE 3. **Brake Line Kit** - This kit consists of an early style brake line designed to connect the sidecar's brake cylinder to the vehicle's rear master cylinder. The sidecar in this combination came originally equipped with a late style brake line. You will need to remove the late style line and replace it with the early style line to mate these two units.

NOTE 4. **Din Adapter** - This adapter cable allows you to plug the vehicle's 3 place DIN audio cable into the sidecar's 7 place DIN audio cable. It is connected as follows:

INSTALLATION - Din Adapter, Part No. 87559-94

Refer to Figure 25, the vehicle's wiring diagram, and the sidecar's wiring diagram for the call-outs.

1. Locate and separate the vehicle's 3 place DIN extension cable connector under the seat. You will be holding the **pod DIN** (a 3 pin male) and the **extension DIN** (a 3 socket female).
2. Connect the **pod DIN** to connector SC49B on the sidecar.

NOTE

You will be putting a 3 pin male connector into a 7 place female. See NOTE 4, above.

NOTE

SC49B in the 1993-1994 Wiring Diagrams Manual is incorrectly labeled. It is labeled as SC49A accompanied by a normal arrow. This is wrong. It should appear as SC49B with an inverted arrow head.

3. See Figure 25. Connect the **extension DIN** to the adaptor end (1).
4. Connect adapter end (5) to connector SC49A on the sidecar.
5. Connect adapter end (3) to **pod DIN** jumper wire (single pin Amp connector coming out of pod DIN cable) on vehicle.

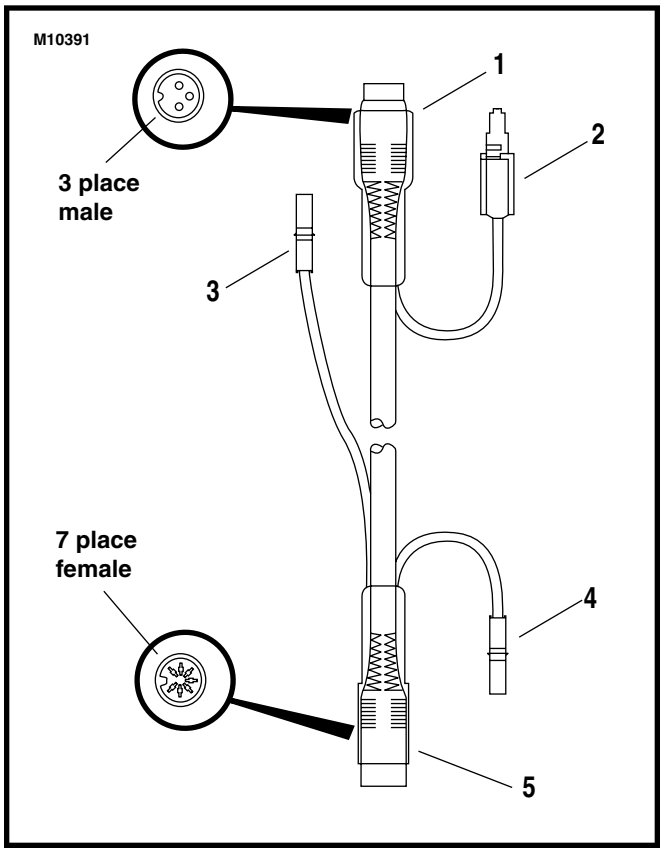

Figure 25. Adapter Cable Part No. 87559-94

6. Connect adapter end (2) to **extension DIN** jumper wire.
7. Connect adapter end (4) to the single pin Amp connector attached to the blue/yellow wire on wiring interface 87550-92 described in NOTE 2.

NOTE 5. **Light Harness** - This harness converts the Deutsch style connector found on the 1994 sidecar to Amp style found on the earlier bikes. It handles the brake, tailight, and turn signal functions. Install it as follows:

1. Locate connector SC74A (4 pin male) on the sidecar. It may be connected to SC74B and therefore to sidecar harness 70028-94, or it may be hanging free, depending on how the sidecar came originally equipped.
2. Connect SC74A to the 4 socket Deutsch connector end of the light adapter harness.
3. Locate and separate connectors 22A&B on vehicle. They are found behind the left side cover, or to the rear of the seat.
4. Install the 2 eight place Amp connectors in the light adapter harness into their respective ends of 22A&B. This will leave a single place Amp connector on an orange wire left over. This connector is not used for stock applications.

NOTE 6. **Wiring Interface** - This interface harness has two 10 place Amp connectors, one eight place Deutsch connector and two loose (one on a white wire, the other on a blue/yellow wire) Amp style single place connectors. Find and separate connector 21A&B on the motorcycle. It is the first

connector out of the passenger sound control panel on the right side of the seat. Insert the two 10 place connectors of the interface harness there. Find connector SC52A (8 pin Deutsch) coming from the sidecar and install the remaining Deutsch end of the interface harness into it. SC52B from the sidecar will be unused. Find connector 15A&B on the motorcycle (under the seat). Connector 15B, place #4 will be vacant, and should line up with a white wire in connector 15A. Install the loose wire from the interface harness into the vacant cavity. The remaining loose blue/yellow wire on the interface harness will be installed into place 4 of adapter cable 87559-94 pictured in Figure 25.

NOTE 7. **Power Adapter** - This adapter will have a 2 pin Amp connector at one end, and two single place Amp connectors at the other, one black wire, the other orange. Connect the 2 pin connector to connector SC68B coming out of the sidecar. Connect the single orange pin of the power adapter to the remaining single orange socket coming from light harness 70058-94. Connect the single black socket of the power adapter to a chassis ground point from the motorcycle.

NOTE 8. **Wiring Interface** - This interface harness has two 8 place Amp connectors at one end and one 10 place Amp connector at the other. Find and separate connector 15A&B on the motorcycle (under the seat). Insert the two 8 place connectors of the interface harness there. Locate connector SC21A on the sidecar and connect the remaining 10 place end of the interface harness to it. Connector SC21B on the sidecar will not be used.

NOTE 9. **DIN adapter** - This adapter will have two 7 place DIN connectors, two 3 place DIN connectors and 2 loose black Amp connectors, one male, the other female. Locate and separate the 3 place DIN connector and it's ground jumper on the motorcycle (under the seat). Insert the 2 three place DIN connectors and the two loose Amp connectors of the DIN adapter there. Locate the 2 seven place DIN connectors coming from the sidecar. Install the remaining 2 seven place DIN connectors of the DIN adapter to those from the sidecar.

NOTE 10. **Wiring Interface** - This interface harness will have two 8 place Amp connectors and two 8 place Deutsch connectors. It will also have one loose Amp pin on a blue/yellow wire. Locate and separate connector 15A&B on the motorcycle (under the seat). Insert the 2 Amp connectors in the wiring interface there. Locate Deutsch connectors SC52A and SC52B coming from the sidecar, and install the two remaining Deutsch connectors in the wiring interface to them. Connect the loose blue/yellow wire from the wiring interface to place 4 of the DIN adapter 87559-94, shown in Figure 25.

NOTE 11. **Brake Line Kit** - This kit consists of a late style brake line designed to connect the sidecar's brake cylinder to the vehicle's rear master cylinder. The sidecar in this combination came originally equipped with a early style brake line. You will need to remove that early line and replace it with the late style line to mate these two units.

NOTE 12. **Connection Kit** - This kit contains the mechanical components needed to physically connect the car to the vehicle. The kit has an instruction sheet that also covers how to hook up the sidecar's basic lighting wiring harness.

NOTE

The Instruction sheet for the connection kit does not detail the harness changes for 1994.

NOTE 13. **Wiring Interface** - This interface harness will have a 10 place Amp connector at one end and two eight place Deutsch connectors with a single Amp connector on a white wire at the other. Connect the 10 place Amp connector of the wiring interface to connector SC21A from the sidecar. Connector SC21B from the sidecar will not be used. Find and separate connector 52A&B on the motorcycle, under the seat (item 5, Figure 44 in 1993-1994 Electrical Troubleshooting Guide). Insert the two eight place Deutsch connectors of the interface harness into 52A&B. Install the white loose single Amp connector on the interface harness to the white loose single Amp connector coming from the sidecar.

NOTE 14. **Light Harness** - This harness will have two 8 place Deutsch connectors at one end and a 4 place Deutsch connector at the other. Find and separate connector 7A&B on the motorcycle under the left side cover (item 2, Figure 62, 1993-1994 Electrical Troubleshooting Guide). Insert the two 8 place Deutsch connectors on the sidecar adapter harness into 7A&B. Install the remaining 4 place Deutsch connector of the sidecar adaptor harness into Light Harness 70058-94.

NOTE 15. **Light Harness** - This harness will have one 4 place Deutsch connector at one end and two 8 place Amp connectors at the other, with a single loose Amp connector on an orange wire. Connect the 4 place Deutsch connector on the light harness to SC74B of sidecar adapter harness 70028-94. Connect the two 8 place Amp connectors on the light harness to the two 8 place Amp connectors coming from the sidecar as part of OE connection harness 70028-85A.

NOTE 16. **Power Adapter** - This adapter will have a 2 place connector at one end, and two separate single Amp connectors at the other, one on a black wire, the other on an orange. Plug the 2 place connector into the connector 68A on the motorcycle's fuse filter board under the left side cover. Plug the single orange Amp connector of the power adapter into the single orange Amp connector of light harness 70058-94. Plug the single black Amp connector of the power adapter into the single black Amp connector coming from the sidecar (that leads back to the sidecar's amplifier).

NOTE 17. **DIN adapter** - This adapter will have two 7 place DIN connectors, two 3 place DIN connectors and 2 loose black Amp connectors, one male, the other female. Locate the two 3 place DIN connectors and their ground jumpers on the sidecar. Insert the 2 three place DIN connectors and the two loose Amp connectors of the DIN adapter there. Locate and separate the seven place DIN connector on the motorcycle (under the seat). Install the remaining 2 seven place DIN connectors of the DIN adapter to those of the motorcycle.

NOTE 18. **Wiring Interface** - This interface harness will have two 8 place Amp connectors and two 8 place Deutsch connectors. It will also have one loose Amp pin on a blue/yellow wire. Locate and separate connector SC15A&B on the sidecar. Insert the 2 Amp connectors in the wiring interface there. Locate Deutsch connectors 52A and 52B on the motorcycle under the seat (item 5, Figure 60, page 152, in the 1993-1994 Electrical Troubleshooting Guide), and install the two remaining Deutsch connectors in the wiring interface to them. The loose blue/yellow wire will be unused.

EXCEPTIONS

* See NOTE 4 - with the exception that step 7 should be:

7. Connect adapter end (4) to the single pin Amp connector attached to the blue/yellow wire on wiring interface 87554-94 mentioned above.

** See NOTE 4 - with the exception that step 7 should be:

7. Connect adapter end (4) to the single pin Amp connector attached to the blue/yellow wire on wiring interface 87559-94 mentioned above.

*** See NOTE 10 - with the exception that the single loose blue/yellow wire will be unused.

† See NOTE 5 - with the exception that the loose orange Amp wire will not be used.

†† See NOTE 10 - with the exception that the single loose blue/yellow wire will be unused.

††† **Lighting Harness** - This harness will have two 8 place Deutsch connectors at one end and a 4 place cannon type receptacle at the other. Find and separate connector 7A from 7B on the motorcycle, under the left sidecover (item 2, Figure 62, page 154, 1993-1994 Electrical Troubleshooting Guide). Insert the two 8 place Deutsch connectors of the lighting harness there. Connect the 4 place cannon type connector of the lighting harness into the mating cannon connector found on the sidecar. You will have to unplug sidecar connector harness 70028-85A if present, because it will not be used in this application.

⚠WARNING

Test drive the vehicle after kit installation to be sure the installation and the handling characteristics are correct. See Sidecar Servlce Manual.

NOTE

Dealer, Before your sidecar customer operates their new motorcycle/sidecar combination, be sure they understand that a motorcycle with a sidecar has different handling characteristics than a motorcycle without a sidecar. Urge them to seek training in correct motorcycle/sidecar riding techniques from a qualified source. Call their attention to SAFE OPERATING RULES in their Sidecar Owner's Manual. If possible, make a point of reviewing the OPERATING GUIDELINES, found in the Service and Owner's Manuals, with them.

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